

CLAIMS

WHAT IS CLAIMED IS:

Sub A1) 5 1. A genetically engineered mammalian cell that has been mutated by a process comprising the insertion of a recombinantly manipulated polynucleotide sequence into a gene in said genetically engineered mammalian cell wherein said gene is identifiable as corresponding to at least one of SEQ ID NOS: 1-574.

10 2. The genetically engineered mammalian cell of Claim 1, wherein said cell is murine.

Sub B1) 15 3. A cell according to Claim 2, wherein said cell is an embryonic stem cell.

20 4. The genetically engineered mammalian cell of Claim 1, wherein said polynucleotide sequence is present on a viral vector.

5. A cell according to Claim 4, wherein said viral vector is a retroviral vector.

25 6. A cell according to Claim 4, wherein said viral vector additionally comprises regions of targeting DNA that facilitate gene targeting by homologous recombination.

Sub A2) 30 7. An isolated murine embryonic stem cell line comprising an engineered retroviral gene trap vector in at least one gene comprising a polynucleotide sequence first disclosed in one of SEQ ID NOS: 1-574.